EDUCATION AND LOCAL GOV'T September 15, 2011 Rm 102, Capitol Bldg, Helena EXHIBIT 15

STATE STANDARDS FOR COMMON CORE

Mathematics and English Language Arts Montana Indian Education for All Including Integration of



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Montana

Office of Public Instruction
Denise Juneau, State Superintendent

Board of Public Education, May 2011 - DRAFT Denise Juneau, Superintendent • Montana Office of Public Instruction • www.opi.mt.gov

Operations and Algebraic Thinking

Understanding addition as putting together and adding to, and understanding subtraction as taking apart and taking from.

1: Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. (Note: Drawings need not show details, but should show the mathematics in the problem — this applies wherever drawings are mentioned in the Standards.)

K.OA.2: Solve addition and subtraction word problems from a variety of cultural contexts; including those of Montana American Indians, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.

K.OA.3: Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).

K.OA.4: For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a

drawing or equation.

K.OA.5: Fluently add and subtract within 5.

Represent and solve problems involving addition and subtraction.

1.OA.1: Use addition and subtraction within 20 to solve word problems within a cultural context. Including those of Montana American Indians. Involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem. (Note: See Glossary, Table 1.)

1.OA.2: Solve word problems within a cultural context including those of Montana American Indians, that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

Understand and apply properties of operations and the relationship between addition and subtraction. 1.OA.3: Apply properties of operations as strategies to add and

OA.3: Apply properties of operations as strategies to add and subtract. (Note: Students need not use formal terms for these properties.)

Examples: If 8 + 3 = 11 is known than 3 + 8 = 11 is also be fixed by the statement of the

Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.)

Understand subtraction as an unknown-addend problem. For example, subtract 10 – 8 by finding the number that makes 10 when added to 8.

Add and subtract within 20.

OA.5: Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).

1.OA.6: Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 - 4 = 13 - 3 - 1 = 10 - 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 - 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).

Work with addition and subtraction equations.

1.OA.7: Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 − 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2.
1.OA.8: Determine the unknown whole number in an addition or subtraction equation relating to three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = □ − 3, 6 +

Represent and solve problems involving addition and subtraction.

2.OA.1: Use addition and subtraction within 100 to solve one- and two-step word problems involving situations within a cultural context, including those of Montatia American Indians, of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. (Note: See Glossary, Table 1.)

Add and subtract within 20.

2.OA.2: Fluently add and subtract within 20 using mental strategies. (Note: See standard 1.OA.6 for a list of mental strategies). By end of Grade 2, know from memory all sums of two one-digit numbers.

Work with equal groups of objects to gain foundations for multiplication

2.OA.3: Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.

2.OA.4: Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.

Board of Public Education, May 2011- DRAFT

Develop understanding of statistical variability.

- 6.SP.1: Recognize a statistical question as one that example, "How old am I?" is not a statistical anticipates variability in students' ages. school?" is a statistical question because one question, but "How old are the students in my question and accounts for it in the answers. For anticipates variability in the data related to the
- 6.SP.2: Understand that a set of data collected (including answer a statistical question has a distribution which can be described by its center, spread, and overall shape. Montana American Indian demographic data) to
- 6.SP.3: Recognize that a measure of center for a numerical how its values vary with a single number. number, while a measure of variation describes data set summarizes all of its values with a single

Summarize and describe distributions.

- 6.SP.4: Display numerical data in plots on a number line, including dot plots, histograms, and box plots.
- 6.SP.5: Summarize numerical data sets in relation to their context, such as by:
- Reporting the number of observations.
- Describing the nature of the attribute under and its units of measurement. investigation, including how it was measured
- Giving quantitative measures of center (median striking deviations from the overall pattern with as describing any overall pattern and any and/or mean) and variability (interquartile reference to the context in which the data were range and/or mean absolute deviation), as well
- Relating the choice of measures of center and and the context in which the data were variability to the shape of the data distribution

7.SP.1: Understand that statistics can be used to gain information about a Use random sampling to draw inferences about a population

- random sampling tends to produce representative samples and the sample is representative of that population. Understand that population by examining a sample of the population; support valid inferences. generalizations about a population from a sample are valid only if
- 7.SP.2: Use data including Montana American Indian demographic data data, predict how many text messages your classmates receive in a estimates or predictions. For example, estimate the mean word day. Gauge how far off the estimate or prediction might be. the winner of a school election based on randomly sampled survey (or simulated samples) of the same size to gauge the variation in an unknown characteristic of interest. Generate multiple samples from a random sample to draw inferences about a population with length in a book by randomly sampling words from the book; predict

Draw informal comparative inferences about two populations.

- 7.SP.3: Informally assess the degree of visual overlap of two numerical data two distributions of heights is noticeable. deviation) on either team; on a dot plot, the separation between the variability. For example, the mean height of players on the the soccer team, about twice the variability (mean absolute distributions with similar variability, measuring the difference basketball team is 10 cm greater than the mean height of players on between the centers by expressing it as a multiple of a measure of
- 7.SP.4: Use measures of center and measures of variability for numerical data from random samples to draw informal comparative longer than the words in a chapter of a fourth-grade science book words in a chapter of a seventh-grade science book are generally inferences about two populations. For example, decide whether the

models. Investigate chance processes and develop, use, and evaluate probability

- 7.SP.5: Understand that the probability of a chance event is a number an event that is neither unlikely nor likely, and a probability near 1 near 0 indicates an unlikely event, a probability around 1/2 indicates occurring. Larger numbers indicate greater likelihood. A probability between 0 and 1 that expresses the likelihood of the event indicates a likely event.
- probably not exactly 200 times. For example, when playing given the probability. For example, when rolling a number cube 600 relative frequency, and predict the approximate relative frequency on the chance process that produces it and observing its long-run times, predict that a 3 or 6 would be rolled roughly 200 times, but Montana American Indian Hand/Stick games you can predict the approximate number of accurate guesses. Approximate the probability of a chance event by collecting data

Investigate patterns of association in bivariate data.

- 8.SP.1: Construct and interpret scatter plots for and nonlinear association. positive or negative association, linear association, Describe patterns such as clustering, outliers, bivariate measurement data to investigate patterns of association between two quantities.
- 8.SP.2: Know that straight lines are widely used to model relationships between two quantitative informally assess the model fit by judging the association, informally fit a straight line, and variables. For scatter plots that suggest a linear closeness of the data points to the line.
- 8.SP.3: example, in a linear model for a biology mature plant height. day is associated with an additional 1.5 cm in meaning that an additional hour of sunlight each experiment, interpret a slope of 1.5 cm/hr as data, interpreting the slope and intercept. For problems in the context of bivariate measurement Use the equation of a linear model to solve
- 8:SP.4: Understand that patterns of association can way table summarizing data, including data from a two-way table. Construct and interpret a twodisplaying frequencies and relative frequencies in evidence that those who have a curfew also tend or not they have assigned chores at home. Is there data from students in your class on whether or not rows or columns to describe possible association subjects. Use relative frequencies calculated for categorical variables collected from the same also be seen in bivariate categorical data by to have chores? they have a curfew on school nights and whether between the two variables. For example, collect Montana American Indian sources, on two

The following standards offer a focus for instruction each year and help ensure that students gain adequate exposure to a range of texts and tasks. Rigor is also infused through the requirement that students read increasingly complex texts through the grades. Students advancing through the grades are expected to meet each year's grade-specific standards and retain or further develop skills and understandings mastered in preceding grades.

difference between first- and third-person		and about Δmerican Indians:	
different stories are narrated, including t		narrator or those of the characters. Include works by	
6. Compare and contrast the point of view	6.	Distinguish their own point of view from that of the	6.

narrations. Include works by and about American w from which the

Describe how a narrator's or speaker's point of view perspectives of American Indians. influences how events are described, <u>including</u>

6

Integration of Knowledge and Ideas

- Explain how specific aspects of a text's illustrations contribute to what is conveyed by the words in a story (e.g., create mood, emphasize aspects of a character or
- Make connections between the text of a story or drama and a visual or oral presentation of the text descriptions and directions in the text identilying where each version reflects specific
- Analyze how visual and multimedia elements contribute novel, multimedia presentation of liction, folktale, myth, to the meaning, tone, or beauty of a text (e.g., graphic

œ (Not applicable to literature)

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(Not applicable to literature)

9.

of stories written by the same author, including characters (e.g., in books from a series). Compare and contrast the themes, settings, and plots American Indian authors; about the same or similar 9.

- ∞ (Not applicable to literature)
- myths, and traditional literature from different and patterns of events (e.g., the quest) in stories, themes and topics (e.g., opposition of good and evil) Compare and contrast the treatment of similar cultures, including those by and about American
 - 9. their approaches to similar themes and topics. traditional and contemporary stories by and about Compare and contrast stories in the same genre (e.g., American Indians, mysteries and adventure stories) on

Range of Reading and Level of Text Complexity

- 10. By the end of the year, read and comprehend independently and proficiently. high end of the grades 2-3 text complexity band literature, including stories, dramas, and poetry, at the
- By the end of the year, read and comprehend end of the range. in the grades 4-5 text complexity band proficiently, with scaffolding as needed at the high literature, including stories, dramas, and poetry,
 - 10. By the end of the year, read and comprehend literature, of the grades 4-5 text complexity band independently including stories, dramas, and poetry, at the high end and proficiently.

Grade 6 students:

Cite textual evidence to support analysis of what the

Key Ideas and Details Grade 7 students:

- text says explicitly as well as inferences drawn from the Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as interences drawn from the text
- Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as interences drawn from the text.

Grade 8 students:

judgments. summary of the text distinct from personal opinions or is conveyed through particular details; provide a Determine a theme or central idea of a text and how it 9

2.

- provide an objective summary of the text analyze its development over the course of the text; Determine a theme or central idea of a text and 2
- relationship to the characters, setting, and plot; provide its development over the course of the text, including its Determine a theme or central idea of a text and analyze an objective summary of the text.

- 9 genres (e.g., stories and poems; historical novels and Compare and contrast texts in different forms or approaches to similar themes and topics. by and about American Indians) in terms of their fantasy stories; traditional and contemporary stories
- 9 period as a means of understanding how authors of place, or character and a historical account of the same Compare and contrast a fictional portrayal of a time, fiction use or alter history. Include texts that contain portrayals and/or accounts by and about American
- 9. myths, traditional stories, or religious works such as the new. Include texts by and about American Indians Bible, including describing how the material is rendered themes, patterns of events, or character types from Analyze how a modern work of fiction draws on

Range of Reading and Level of Text Complexity

- 10. By the end of the year, read and comprehend scaffolding as needed at the high end of the range. grades 6-8 text complexity band proficiently, with literature, including stories, dramas, and poems, in the
- 10. By the end of the year, read and comprehend scaffolding as needed at the high end of the range. the grades 6-8 text complexity band proficiently, with literature, including stories, dramas, and poems, in
- 10. By the end of the year, read and comprehend literature, grades 6-8 text complexity band independently and including stories, dramas, and poems, at the high end of proficiently.

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Grades 11-12 students:

Key Ideas and Details Grades 9-10 students:

Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including works by and about American Indians.

- Cite strong and thorough textual evidence to support analysis of what the text says explicitly (within cultural contexts, including those of American Indians) as well as inferences drawn from the text, including determining where the text leaves matters
- 9 လ summary of the text. how it emerges and is shaped and refined by specific details; provide an objective Determine a theme or central idea of a text, including those by and about American Indians, and analyze in detail its development over the course of the text, including
- Analyze the impact of the author's choices regarding how to develop and relate elements of a story or drama, or oral or written history (e.g., where a story is set, how objective summary of the text. how they interact and build on one another to produce a complex account; provide an

American Indians and analyze their development over the course of the text, including Determine two or more themes or central ideas of a text, including those by and about

- with other characters, and advance the plot or develop the theme. develop over the course of a text, (including those of American Indians), interact Analyze how complex characters (e.g., those with multiple or conflicting motivations)
- တ the action is ordered, how the characters are introduced and developed).

Craft and Structure

- Determine the meaning of words and phrases as they are used in the text, including understandings within historical and/or contemporary contexts). place; how it sets a formal or informal tone; how it reveals complex cultural choices on meaning and tone (e.g., how the language evokes a sense of time and figurative and connotative meanings; analyze the cumulative impact of specific word
- 5 impact of specific word choices on meaning and tone, including words with multiple Shakespeare, works by American Indian authors, as well as other authors.) meanings or language that is particularly fresh, engaging, or beautiful. (Include Determine the meaning of words and phrases as they are used in the text, including ligurative and connotative meanings, and usage within cultural contexts; analyze the

Analyze how an author's choices concerning how to structure specific parts of a text

- Ç such effects as mystery, tension, or surprise. Analyze how an author's choices concerning how to structure a text, order events within it (e.g., parallel plots), and manipulate time (e.g., pacing, flashbacks) create
- stated in a text from what is really meant (e.g., satire, sarcasm, irony, or Analyze a case in which grasping point of view requires distinguishing what is directly tragic resolution) contribute to its overall structure and meaning as well as its aesthetic (e.g., the choice of where to begin or end a story, the choice to provide a comedic or

understatement) within diverse cultural contexts, including those of American Indians.

9

6. Analyze a particular point of view or cultural experience reflected in a work of literature from outside the United States, drawing on a wide reading of world